ductive age and during pregnancy. A higher riboflavin status can however attenuate the effect of this genetic variant on blood pressure. A randomized controlled trial in pregnant women is necessary to investigate the effect of riboflavin on blood pressure during pregnancy in women stratified by MTHFR genotype and such a study is underway at our center.

Keywords: Blood pressure. pregnancy. MTHFR 677 C→T. riboflavin.

144/2047

VEGANISM, VEGETARIANISM AND BONE MINERAL DENSITY: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background and objectives: The number of vegans and vegetarians has increased in the last decades. However, the impact on these diets on health, particularly on bone mineral density (BMD) is still under debate.

The aim of this systematic review and meta-analysis was to provide an overview of the current knowledge of vegetarian and vegan diets on BMD in children and adults.

Methods: A systematic search of Pubmed, Scopus, and Science Direct was conducted from 1988 to March 2017, with data extraction and quality assessment performed independently by two researchers following the PRISMA methodology. Two meta-analyses were performed comparing omnivorous to vegetarians and to vegans. Effect sizes with the Hedges g in random effect models were carried out and beta coefficients according to the method of moments were calculated to test possible influences of age, sex and ethnicity. Fourteen observational studies met the inclusion criteria and were included in the meta-analyses.

Results: Vegetarians presented lower BMD compared to omnivorous in femoral neck (g= -0.202; CI -0.45, -0.015) and lumbar spine (g=-0.308; CI -0.555, -0.060). Vegans also presented lower BMD compared to omnivorous in femoral neck (g=-0.494; CI -0.799, -0.189) and lumbar spine (g=-0.674; CI -1.152, -0.195) ($p<0.05$). The coefficient of heterogeneity varied between 0% and 83%. For the lumbar spine, Asians had smaller differences on BMD between vegetarians and omnivorous (B=0.360; p=0.005) and between vegans and omnivorous (B=1.139; $p<0.001$) than Caucasians.

Conclusions: Vegetarians and vegans present lower BMD values when compared to omnivorous suggesting additional control over this population.

Keywords: Vegeterians, vegans, omnivorous, bone mineral density, meta-analysis.

144/2279

IMPACT OF A CASH TRANSFER PROGRAM TARGETING THE "1000 DAYS PERIOD" ON LOW BIRTH WEIGHT AND GROWTH RETARDATION: A CLUSTER RANDOMIZED TRIAL IN TOGO

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Background and objectives: In northern Togo, the Government, the World Bank and Unicef have implemented an intervention program in two rural regions aiming at promoting children's nutrition, health and rights. The program consisted of a monthly cash transfer (CT) of 8.40 USD given to women during the "1,000 days period" (from conception until the child reaches the age of two), combined with Behavior Change Communication activities (BCCA). The program's impact on growth retardation and low birth weight was analyzed.

Methods: In both regions, 162 villages were randomized into either an intervention group (CT+BCCA) or a control group (BCCA). Two repeated cross-sectional surveys were conducted among random samples of 6-30 mo old children and their mothers before the intervention (baseline, n=2,658) and two years after the start of the intervention (endline, n=2,031). Standardized anthropometrics of children were measured to determine growth retardation prevalence, defined as a weight-for-height Z-score<-2 SD. Birth weights were collected from health cards to determine low birth weight (LBW) prevalence (birth weight<2500g). A difference-in-differences analysis was performed to assess the impact of the intervention on these indicators, using logistic regressions. First priority was given to intention-to-treat (ITT) analysis. Per protocol (PP) analysis was also performed due to program's implementation issues: at endline, only 400 mothers out of the 1396 surveyed from the intervention group actually received the CT.

Results: Using ITT analysis, the prevalence of growth retardation decreased from 30.3% to 26.7% between baseline and endline in beneficiaries, while it increased from 28.1% to 30.6% in non-beneficiaries, but the difference between groups was not statistically significant (p-value=0.12). The PP analysis showed

further decrease in growth retardation prevalence between the two rounds among beneficiaries (30.3% to 24.2%) and a statistical difference between the intervention and control groups (p-value=0.03). The CT program also had a positive impact on the proportion of children with LBW which dropped from 13.5% to 7.2% between baseline and endline among beneficiaries, and remained stable among non-beneficiaries (9.5% versus 11.6%) (p-value=0.02). Similar results were observed in PP analysis.

Conclusions: Despite implementation issues the CT program contributed to reduce low birth weight and growth retardation.

Keywords: Cash transfer program, growth retardation, low birth weight, Togo

144/2293

CAN UNICEF'S COMMUNITY INFANT AND YOUNG CHILD FEEDING COUNSELLING PACKAGE BE SUCCESSFUL AT SCALE? RESULTS FROM A LARGE-SCALE EVALUATION IN NIGERIA

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Background and objectives: In 2010 UNICEF developed the Community Infant and Young Child Feeding (C-IYCF) Counseling Package of generic materials to promote specific practices known to have an impact on nutritional status, morbidity, and mortality. Despite widespread uptake of the package by over 60 countries, very little research has been done to examine the impact of the package. To help fill this evidence gap, the USAID-funded Strengthening Partnerships, Results, Innovations in Nutrition Globally (SPRING) project, the Nigerian Federal Ministry of Health, and UNICEF have just completed an evaluation of the effectiveness of this package, implemented at scale in one local government area (LGA) where approximately 140,000 people live in Kaduna State, Nigeria.

Methods: The intervention included a series of sensitization meetings, training of health workers and community volunteers, support group meetings, review meetings, and community mobilization events. Implementation processes and costs were closely tracked. To evaluate the effectiveness of the C-IYCF package in changing IYCF knowledge, attitudes, and practices as well as nutrition outcomes we used a mixed methods approach. We conducted baseline (Dec 2014 – March 2015) and post-intervention (Jan – March 2017) household surveys in the intervention LGA and in one comparison LGA. We also conducted semi-structured interviews to collect information on IYCF knowledge and attitudes among local government, health workers, and community leaders.

Results: We observed significant improvements in knowledge and attitudes among pregnant women, mothers, and community leaders. As a result, practices changed. At baseline, 30.9% of children under 6 months old in the intervention site (N=366) were exclusively breastfed. After the intervention, 49.9% of children under 6 months old (N=709) were exclusively breastfed. The percentage of infants 6-8 months old who had received solid foods during the previous day increased from 56.0% (N=250) to 64.1% (N=287). Maternal nutrition practices also improved – the percent of women reporting that they ate more during her last pregnancy increased from 35.6% (N=1,752) to 50.0% (N=761).

Conclusions: After implementing the C-IYCF Counselling Package at scale in one LGA, knowledge, attitudes, and IYCF practices had improved. This study demonstrates that the C-IYCF package is an effective and feasible approach for implementation at scale.

Keywords: Nutrition, scale, community-based, infant and young child feeding (IYCF)

144/2305

LEVEL OF IMPLEMENTATION OF BEST PRACTICE POLICIES FOR CREATING HEALTHY FOOD ENVIRONMENTS: AN ASSESSMENT BY INDEPENDENT (ACADEMIA, CIVIL SOCIETY AND LEGISLATORS), GOVERNMENT, AND PRIVATE SECTOR ACTORS

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Background and objectives: Unhealthy food environments are a major driver of obesity and non-communicable diseases (NCDs). Government actions are essential to prevent these conditions. The international network INFORMAS developed protocols to evaluate and benchmark these actions. The Food Environment Policy Index (Food-EPI) was created to assess them. The objective of the study is to determine the level of implementation of policies for healthy food environments in Mexico with reference to international best practice.

Methods: The Food-EPI tool and process were adapted to the Mexican context. 72 indicators were assessed. Evidence for imple-

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